

Claims

1. A method of transporting a supercarrier signal over a network span, ✓
the method comprising the steps of:

5 transmitting said supercarrier signal, including messaging
information, using a first protocol;

transparently demultiplexing said supercarrier signal into a plurality
of trib signals;

10 transmitting said trib signals over said network span using a second
protocol; and

whereby the messaging information required to maintain said first
protocol is included in said trib signals.

2. A method as claimed in claim 1, wherein the messaging information
15 is used to transparently multiplex the trib signals into the supercarrier
signal.

3. A method as claimed in claims 1, wherein each trib signal is
multiplexed from a plurality of basic signals.

20 4. A method as claimed in claim 1, wherein the messaging information
includes both essential messaging information and desirable messaging
information.

25 5. Apparatus for transporting a supercarrier signal over a network span ✓
including:

a network for transporting said supercarrier signal, including
messaging information, using a first protocol;

30 a network span comprising a plurality of low bit rate network
sections for transporting a plurality of trib signals using a second protocol;

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a transparent demultiplexer connected to said network and said network span for demultiplexing said supercarrier signal into said trib signals; and

wherein said demultiplexer includes means for inserting into said plurality of trib signals the messaging information required to maintain said first protocol.

6. Apparatus as claimed in claim 5, further including a multiplexer, connected between said network span and said network, for transparently 10 multiplexing the trib signals into the supercarrier signals.

7. Apparatus as claimed in claims 5, wherein the information required to maintain the first protocol is extracted from the trib signals.

15 8. Apparatus as claimed in claim 5, wherein the trib signals may pass in both directions along the network span.

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Apparatus as claimed in claim 5, wherein the network span includes a transparent multiplexer and a transparent demultiplexer.

20 10. A transparent demultiplexer comprising:
an input for receiving a supercarrier signal transported using a first protocol;
a plurality of outputs for transmitting a plurality of trib signals using a second protocol;
means for demultiplexing said supercarrier signal into said trib signals; and
means for extracting messaging information, required to maintain said first protocol, from the supercarrier signal and inserting said 30 messaging information into the trib signals.

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11. A transparent multiplexer comprising:
an output for transmitting a supercarrier signal using a first protocol;
a plurality of inputs for receiving a plurality of trib signals transported using a second protocol;
means for multiplexing said trib signals into said supercarrier signal;
and
means for extracting messaging information from the trib signals and using said messaging information to maintain said first protocol.
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- 10 12. A network span comprising a plurality of low bit rate network sections, the network span having a first end terminated by a transparent demultiplexer and a second end terminated by a transparent multiplexer, wherein:
the transparent demultiplexer comprising:
15 a) an input for receiving a supercarrier signal transported using a first protocol;
b) a plurality of outputs for transmitting a plurality of trib signals using a second protocol;
c) means for demultiplexing said supercarrier signal into said trib signals; and
20 d) means for extracting messaging information, required to maintain said first protocol, from the supercarrier signal and inserting said messaging information into the trib signals; and
the transparent multiplexer comprising:
25 e) an output for transmitting a supercarrier signal using a first protocol;
f) a plurality of inputs for receiving a plurality of trib signals transported using a second protocol;
g) means for multiplexing said trib signals into said supercarrier signal; and
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h) means for extracting messaging information from the trib signals and using said messaging information to maintain said first protocol.

5 ~~13~~ The network span as claimed in claim 12, wherein the network span includes a transparent multiplexer and a transparent demultiplexer at each end.

10 ~~14~~ ¹⁴ ~~18~~ The network span as claimed in claim 12, wherein the plurality of low bit rate network sections provide parallel communication paths.

15 ~~14~~ An optical communication network arranged to support, using a first protocol, the carriage of a supercarrier signal including messaging information through the optical communication network, the optical communication network further including:

a network span comprising at least one low bit rate network section for transporting a plurality of trib signals using a second protocol; a transparent demultiplexer connected to said network span for demultiplexing said supercarrier signal into said trib signals; and wherein said demultiplexer includes means for inserting into said

20 plurality of trib signals the messaging information required to maintain said first protocol.

25 ~~16~~ ¹⁶ ~~15~~ The optical communication network of claim ~~14~~, wherein the optical communication system is in the form of a loop

~~16~~ ¹⁵ ~~17~~ The optical communication network of claim ~~14~~, wherein the network span comprising a plurality of low bit rate network sections providing parallel communication paths across the network span.

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